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May 29, 2009

Mr. Steve Wilde
Macris, Hendricks & Glascock, P.A.
9220 Wightman Road, Suite 120
Montgomery Village, MD 20886-1279

Re: Kol Shalom
Stormwater Management (SWM) Concept
PAM2009-00001/SMP2009-00009

Dear Mr. Wilde: Steve

The Stormwater Management (SWM) Concept, received May 19, 2009 for the above referenced site is conditionally approved. The proposed development at Lot 15, Block A, Ivy Woods and P.705 and P.706 on Tax Map FR53 includes the following: construction of a synagogue (one building) with associated drive aisles, parking, service drive, loading area, sidewalks, communal amenities and infrastructure. The property is zoned R-200 and is in the Watts Branch watershed.

Based on your application, the proposed development contains approximately 3.61 acres (157,300 sq.ft.) of disturbed area. The overall site area, before street dedication, is approximately 5.06 acres (220,254 sq.ft.). Since the disturbed area is more than 50 percent of the entire site area, SWM is required for the site's total impervious area of 2.32 acres, which includes the green roof areas (7950 sq.ft. on the east and 5360 sq.ft. on the west) and the porous paver area (10,120 sq.ft. on the east). However, for purposes on this approval and subsequent detailed design, the green roof and porous paver areas can be considered to be pervious if designed in accordance with applicable standards. SWM also is required for an additional 0.17 acres of impervious area located within the adjacent right-of-way (ROW). The submitted SWM Concept proposes the following:

1. **Channel Protection Volume (Cpv)** - Channel Protection Volume for the site will be provided as follows:
    a. West subarea
        i. An on-site, underground facility with storage in CMP pipes and a concrete control structure for 1.3 acres of impervious area in the western subarea (which does not include the green roof), and
        ii. Approximately 4090 sq.ft. (0.09 acres) of green roof.

    b. East subarea
        i. "Over compensation" in the underground facility utilizing compensatory over storage for the 0.52 acres of impervious area (which does not include the green roof or porous paver areas),
        ii. Approximately 10,120 sq.ft. (0.23 acres) of porous pavers for the paved plaza areas, and
        iii. Approximately 7950 sq.ft. (0.18 acres) of green roof.

2. **Overbank Flood Protection (Qp10)** - Overbank Flood Protection Management for the site will be provided by SWM alternative, monetary contribution, in lieu of on-site management due to vertical and horizontal constraints that make the implementation of measures to provide this management impractical. The total impervious area used in the calculation includes all of the paved areas, as well as the entire roof areas (green and non-green) and the porous paver areas.
    a. West subarea – 1.39 impervious acres
    b. East subarea – 0.93 impervious acres

3. **Pretreatment** – Pretreatment of runoff prior to water quality treatment is proposed to be provided via an hydrodynamic type structure that will be located between the flow splitter pipe and the StormFilter vault for the West subarea. Pretreatment for the service area in the Eastern subarea will not be required as several filtration measures are being proposed with this SWM Concept.

4. **Water Quality Volume, Non- Recharge (WQv)** – Water Quality Non-Recharge for the site will be provided as follows:
    a. West subarea
        i. An on-site, underground filtering system (StormFilter) housed in a concrete vault. A CMP pipe system will be utilized for storage, and
        ii. Approximately 4090 sq.ft. (0.09 acres) of green roof.
    b. East subarea
        i. Off-line manhole StormFilter(s) for the non-green roof area utilizing flow based design,
        ii. Approximately 7950 sq.ft. (0.18 acres) of green roof,
        iii. Approximately 10,120 sq.ft. (0.23 acres) porous pavers for the paved plaza areas, and
        iv. A catch basin StormFilter for the paved loading, trash and service areas utilizing flow based design.

5. **Water Quality Volume, Recharge (Rev)** Water Quality Recharge for the site will be provided for both the 1.3 impervious acres from the West subarea and 0.52 impervious acres from the East subarea via additional stone below the porous paver plaza areas.

6. **Darnestown Road Right-of-Way** - In accordance with the City of Rockville's SWM Ordinance, SWM is required for the existing, replaced or new impervious area within 30'of the contiguous ROW of Darnestown Road. The SWM Concept proposes a SWM alternative, monetary contribution, in lieu of providing on-site SWM due to the inability to collect and management runoff in this portion of the ROW.

This SWM concept is approved subject to the following conditions, which must be addressed at the stages in the process as indicated below:

1. Perform infiltration tests and prepare a report for all measures that utilize filtering methods (i.e. porous paver.). The report must be furnished to the Department of Public Works

(DPW). An infiltration rate of $\geq$ 0.52 inches/hour will be required in order for the proposed practice to be utilized. If the minimum infiltration rate is not achieved, the applicant must present alternative water quality measures for approval by DPW. The use of porous pavers as supported by the infiltration testing or the alternative measures (if rates are found to be below the minimum acceptable) must be accepted by DPW prior to the approval by the authorizing body.

2. Provide pre-treatment of storm flows prior to underground filtering system utilizing a hydrodynamic system and method allowed and approved by the DPW for the West subarea. Pretreatment of the runoff for the East subarea will not be required.

3. Applicant shall contribute to the City Stormwater Fund as a SWM alternative to providing on-site Qp_{10} management. This monetary contribution has been computed to be approximately $46,400 based on the on-site impervious area that cannot be managed onsite, which is 2.32 impervious acres at a rate of $20,000 per impervious acre. The actual contribution shall be determined at the time of detailed engineering and must be based upon the final site plan and the fees in place at the time of permit issuance. Payment of the monetary contribution is required prior to DPW permit issuance.

4. In order to qualify for the monetary contribution for Qp_{10}, the applicant must demonstrate, at detailed engineering, that the ten-year storm event (utilizing the rational method) can be safely conveyed through the existing storm drain system to Fallsgrove Stormwater Management Facility #2. Upgrades to the existing storm drain system may be required if safe conveyance cannot be demonstrated.

5. Provide computations to support the use of green roof areas and porous pavers areas at detailed engineering. These areas can be considered to be pervious if designed in accordance with applicable standards. A minimum of 6" depth will be required for all green roof areas.

6. Applicant shall contribute to the City Stormwater Fund as a SWM alternative to providing on-site Water Quality, Channel Protection and Qp_{10} SWM for the impervious acres within 30' of the contiguous ROW of Darnestown Road that cannot be managed on-site. This monetary contribution has been computed to be approximately $8,840 based on the impervious area in the ROW at a rate of $52,000 per impervious acre. The actual contribution shall be determined at the time of detailed engineering and must be based upon the final improvement plan and the fees in place at the time of permit issuance. Payment of the monetary contribution is required prior to DPW permit issuance.

7. Provide an analysis of the affect of ponding due to the adjacent low point and high point in the Darnestown Road at Site Plan stage and demonstrate that runoff from the proposed development will not adversely impact the properties that front Darnestown Road.

8. Provide grading that does not include low points or low point inlets in the porous paver areas. Demonstrate how safe overland flow away from the buildings will be achieved at

detailed engineering. Building foundations must be designed to address proximity to porous paver materials and must be certified by a geotechnical engineer or other qualified professional at detailed engineering.

9. Provide an exhibit and computations for all areas showing the impervious areas being treated (quantity and quality), as well as the areas covered by a SWM alternative (monetary contribution) including the Darnestown Road ROW at detailed engineering. Show all proposed SWM structures, measures and features on this exhibit.

10. Submit a detailed storm drain plan with computations and a supporting drainage area map for use by DPW in review of the detailed engineering. Montgomery County Department of Permitting Services (MCDPS) will approve and permit permanent work in the Darnestown Road ROW.

11. Submit a Rockville SWM permit application, permit fees and SWM Database Sheet associated with the SWM plans.

12. Post financial security based on the approved construction estimate in a format acceptable to the City Attorney. Approval by the City Attorney is to be coordinated through DPW.

13. Submit a SWM Easement/Maintenance Agreement for all features, including the green roof areas, signed (executed) by the property owner(s) for review and approval by DPW and the City Attorney's Office. The approved and executed SWM Easement/Maintenance Agreement must be recorded in the Montgomery County Land Records prior to DPW permit issuance.

14. Submit a Forest Conservation Plan (FCP) to the Assistant City Forester for review and approval. The FCP must be approved prior to DPW issuing SWM and sediment control permits.

COMAR 26.17.02.03 requires each county and municipality to adopt, by May 4, 2010, a revised ordinance that complies with the recently enacted revisions to the Maryland Department of the Environment (MDE), 2000 Maryland Stormwater Design Manual Volumes I & II. As mandated, the revisions must be applied to all new development and redevelopment projects that do not have final approval for erosion and sediment control and SWM plans by May 4, 2010. Therefore, the applicant is strongly urged to consider this State mandated deadline and potential impacts and implications to the project timing, detailed engineering plan approvals and costs.

This SWM Concept approval will be considered void on May 4, 2010 unless the detailed engineering plans are approved by that date. In addition, this concept approval does not guarantee that an approval of an Erosion and Sediment Control Plan or a SWM Plan will by issued by DPW before May 4, 2010.

Any significant modification, revisions or alterations to the approved types, methods, locations and sizes of SWM measures approved with this SWM Concept may result in the requirement to submit a revised SWM Concept for approval by DPW.

If you have any questions, please contact Mary Fertig, Civil Engineer II, of my staff at 240-314-8535.

Sincerely,

Susan T. Straus, P.E.
Chief Engineer/Environment

cc: Deb Finkelstein, Kol Shalom
Donald Silverstein, Blake Real Estate Inc.
Mike Plitt, MHG
Jim Wasilak, Chief of Planning
Charlie Baker, Chief of Inspection Services
Margaret Hall, Planner II
Elise Cary, Assistant City Forester
Mark Wessel, Civil Engineer III
Mary Fertig, Civil Engineer II
Permit Plan
Day File

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